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Combining ability analysis in cowpea [*Vigna unguiculata* (L.) Walp.]

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ABSTRACT : Seven parental genotypes of cowpea were crossed in 7 × 7 diallel fashion excluding reciprocals to obtain twenty one (21) F_1's hybrids. Variance due to general combining ability (GCA) was found to be significant for all the characters except number of branches per plant, number of pods per plant, pod length, number of seeds per pod and hundred seed weight. All the characters except hundred seed weight recorded significant variances for specific combining ability (SCA). The significance of both GCA and SCA variances for most of the characters indicated that both additive as well as non-additive gene actions were involved in the inheritance of all the studied characters. The variances of GCA:SCA ratio was recorded less than unity which indicated the preponderance of dominance and dominance × dominance type of gene actions for all the characters under study. The best genotype identified on the basis of GCA effects for seed yield per plant and yield attributing characters was Phule CP-5040. Similarly, the best hybrid on the basis of specific combining ability (SCA) effects for seed yield per plant was CDP-108 × CDP-11 followed by W-3-2 × W-5, GC-4 × Waghai Local, Waghai Local × W-5 and Phule-CP-5040 × W-5.

Key Words: Cowpea, diallel, General Combining Ability, hybrid, Specific Combining Ability.